THE MINERAL INDUSTRIES OF

BELGIUM AND LUXEMBOURG

By Harold R. Newman

Belgium

The mineral-processing industry was a significant contributor to the Belgian economy in 2000. The refining of copper, zinc, and minor metals and the production of steel, all from imported materials, were the largest mineral industries in Belgium. The extraction and recovery of nonferrous metals were carried out in large-scale, high-technology plants. Europe's largest electrolytic copper and zinc refineries were in Belgium, as was one of the continent's largest lead refineries. The country was also a significant producer of cadmium, germanium, selenium, and tellurium as byproducts from smelting and refining operations.

Although the country is small, Belgium has a significant industrial minerals sector. The country was an important producer of four groups of industrial materials: carbonates, which included limestone, dolomite, and whiting; synthetic materials in the form of soda ash and sodium sulfate; silica sand; and construction materials, which included a wide range of different types of marble.

Environmental policy in Belgium was the responsibility of the Federal Ministry of the Environment, as well as its comparable ministries in Flanders and Wallonia, which are two separate regions of the country. Individual companies were responsible for environmental protection in their own areas of concern and contributed to environmental investment programs. These environmental programs ranged from treating oil effluent to reducing air pollution emissions.

Belgium was a major exporting country with a highly developed market economy and, in 1999 (the year for which the latest data are available), was ranked as the 11th largest trading nation in the world, with exports and imports each equivalent to about 70% of the gross national product, thus making it one of the highest per capita exporters in the world. It has a long history of reliance on international trade. Three-quarters of Belgium's trade were with other member states of the European Union (EU) (U.S. Department of State, July 2001, FY 2001 country commercial guide, accessed March 13, 2001, at URL http://www.state.gov/www/about_state/business/com guides2001.pdf).

On May 1, 1998, Belgium became a member of the European Monetary Union. Belgium will gradually shift from the use of the Belgian franc (BF) to the use of the euro (€) as its currency by January 1, 2002. On January 1, 1999, the exchange rate between the Belgian franc and the euro was established at BF40.3399 to €1.0000 (U.S. Department of State, July 1999, FY2000 country commercial guide—Belgium, accessed July 19, 2000, at URL http://www.state.gov/www/about_state/business/com_guides/2000/europe/belgium00_02.html).

Belgium, the Netherlands, and Luxembourg (BENELUX) form the BENELUX customs unit. Since 1921, the economic union between Belgium and Luxembourg, which is known as the Belgium-Luxembourg Economic Union (BLEU), has

involved the parity of currency, integrated foreign trade (including statistics), a balance-of-payments account, and a joint central bank. International trade data for Belgium are covered in the context of the BLEU and, as such, also cover the exports, reexports, and imports of Luxembourg. Other members of the EU were the BLEU's most important trading partners.

Production of mineral commodities generally remained stable during 2000. As in the past, any increases in production generally followed the lines of exported goods, such as value-added nonferrous metals (table 1).

Table 2 lists the principal mining and mineral-processing facilities in Belgium with their location and capacity. The only mining operations left in Belgium in 2000 were for the production of sand and gravel and the quarrying of stone. Marble was an important export commodity. The metal-processing sector of the industry almost exclusively used imported raw materials, whether metal concentrates, scrap, or other materials, for smelting and refining or metal for forming and casting.

Union Minière (UM) was one of the world leaders in the nonferrous metals sector. UM produced and marketed more than 20 nonferrous, precious, and speciality metals through its four business units: the copper and precious metals unit, the zinc unit, the advanced materials unit, and the diamond and synthetic abrasives unit. UM's industrial activities covered smelting and refining, transformation, and recycling and provided base metals and semifinished products for other industries. UM's precious metals facility recycled complex industrial intermediate materials and specific precious-metal-bearing scrap from electronic, photography, and catalyst applications (Mining Magazine, 1999).

Sté. Générale de Belgique (SGB) disposed of its 25.2% stake in UM via a convertible bond issue. The bond issue was exchangeable for shares totaling 22.2% of UM's share capital. The rest of SGB's interest was sold to UM management in the form of options (Metal Bulletin, 2000d).

UM delayed making a decision on whether to upgrade its zinc smelters partly due to a labor strike in 2000. The plan included expanding smelter capacity at the Balen and Auby plants by about 60,000 metric tons per year (t/yr)—Auby by 40,000 t/yr and Balen by 20,000 t/yr. On completion of the proposed expansion, UM's total zinc smelting capacity would be approximately 320,000 t/yr (Metal Bulletin, 2000f).

UM planned an expansion of battery raw materials capacity that would approximately double production of zinc powders for alkaline batteries. UM would not give an estimated figure for the planned increased capacity at the plant. The reason for the expansion was the continued growth of alkaline batteries and increased demand for zinc powder (Metal Bulletin, 2000e).

Sidmar NV completed construction of its two hot-dip galvanizing lines at its Ghent steelworks. The first line has a capacity of 400,000 t/yr, and the second line has a capacity of 240,000 t/yr. The first line will specialize in automotive

applications. The second line will produce thin gauge strip to supply the packing and construction sectors. The lines were built adjoining the facility's existing cold-rolling shop, and went on-stream in mid-2000. The project was the latest in a series of expansion plans by the Acieries Reunies de Burbach-Eich-Dudelang (ARBED) affiliates in the production of galvanized sheet. Sidmar and Hoogovens IJmuiden were also proceeding with plans to install a second line (Galtec 2) at Hoogovens' steelworks in the Netherlands (Metal Bulletin, 2000b).

Sidmar was planning to install a second continuous slab caster at its Ghent steel works along with relining its two blast furnaces. The new caster will have a capacity of 2 million metric tons per year and was due to be commissioned in the fourth quarter of 2001. The new caster will allow Sidmar to better meet the demands of its rolling mills and to move towards the production of value-added steels for the automotive industry. The expansion also means that Sidmar will no longer be a buyer of slabs (Metal Bulletin, 2000c).

After noting criticism, contained in a United Nations report on trade in illegal Angolan diamonds, that Antwerp has lax controls and regulations regarding importation of diamonds, the Diamond High Council (HRD) of Belgium, which acts as promoter and overseer of Antwerp's diamond trade, announced it would assist the Angolan Government to establish a system to curb illegal diamond trading. Antwerp was estimated to handle around 80% of the world trade in rough (uncut) diamonds and 50% of the world trade in polished stones (Mining Journal, 2000). According to HRD, Belgium's total diamond turnover in 2000 grew by nearly 9% to a record \$25.8 billion, up from nearly \$24 billion in 1999. This included a 16% increase in polished-stone sales overseas, from \$5.2 billion to \$6.1 billion in 2000. There was a slight rise in exports to the United States, which remained the main destination, taking almost 40% of Belgium's goods (Basel Magazine, 2001). The country's international trade in rough and in polished unmounted diamonds is listed in tables 3 and 4.

Belgium, which has been an important producer of marble for more than 2,000 years, was recognized for the diversity and quality of its dimension stone. The so-called petit granite, which is actually a dark blue-gray crinoidal limestone, was one of the most important facing stones the country produces. All the marble quarries are in Wallonia. Red, black, and gray are the principal color ranges of the marble, most of which is exported.

When the last Belgian coal mines closed in 1992, the country became entirely dependent on imported primary energy. Belgium imported coal to meet the needs of the steel, cement, and power-generating industries and imported all its crude oil for its four petroleum refineries. Belgium's seven nuclear powerplants supplied more than 60% of its electricity needs. Natural gas, which was considered to be more environmentally acceptable as a fuel, has begun to play a more important role as an energy source. With Belgium at the center of the European gas grid, the country was favorably located for obtaining natural gas.

Corporate restructuring and the government policy of budget cuts, split between the Federal Government and the regional authorities of Flanders and Wallonia, were expected to make Belgian products more competitive in the world market. The export-oriented Belgian industries rely heavily on the markets of its trading partners; when these partners' profits and cashflow increase, Belgium's economy will also experience positive

results because it will be able to export more of its products.

Luxembourg

In 2000, Luxembourg's mineral industry consisted principally of raw materials processing, information systems, and mineral trading.

As a member of the BLEU, trade statistics for Luxembourg are inextricably linked with those of Belgium and, therefore, cannot be listed individually. The iron and steel industry was Luxembourg's most important mineral industry sector, with steel being the country's main export commodity.

ARBED dominated the mineral industry and was the major producer of pig iron, crude steel, and stainless steel, all from imported material. The company specialized in the production of large architectural steel beams. The company was also involved in other areas of the economy, such as the cement and brickmaking industries. ARBED's domestic and foreign subsidiaries had interests in steelmaking and steel products, cement, copper foil production, engineering, and mining.

Mining in Luxembourg was represented by small industrial mineral operations that produced material for domestic consumption. These minerals included dolomite, limestone, sand and gravel, and slate (table 5). Luxembourg's principal producers of mineral industry products are listed in table 6.

ARBED shut down the 900,000 t/yr electric-arc furnace at Esch-Belval, and it was unlikely to restart before yearend. The shutdown was the result of faulty pollution-control equipment. Rolling mills at the plant remained in operation and were supplied with semis from other group steelworks. The Belval plant produces sections and sheet piling (Metal Bulletin, 2000a).

References Cited

Basel Magazine, 2001, Diamond report: Basel Magazine, no. 26, June, p. 113. Metal Bulletin, 2000a, ARBED shuts Belval EAF: Metal Bulletin, no. 8506, September 7, p. 22.

——2000b, Sidmar galv lines set for start-up: Metal Bulletin, no. 8468, April 17, p. 23.

———2000c, Sidmar to install new slab caster: Metal Bulletin, no. 8444, January 24, p. 18.

————2000d, Sté. Générale de Belgique disposes of 25% stake in UM with bond issue: Metal Bulletin, no. 8533, December 11, p. 5.

———2000e, Union Minière to boost zinc powder output: Metal Bulletin, no. 8473, May 8, p. 7.

2000f, Union Minière zinc expansion delayed after strike: Metal Bulletin, no. 8469, April 20, p. 9.

Mining Journal, 2000, Belgium to help set up diamond control system: Mining Journal, v. 334, no. 8578, April 14, p. 284.

Mining Magazine, 1999, Union Minière—Building on tradition: Mining Magazine, v. 181, no. 2, August, p. 128.

Major Sources of Information

Institute National de Statistiques
Rue de Louvain 44
1000 Brussels, Belgium
Service Geologique de Belgique
Rue Jenner 13
1040 Brussels, Belgium
Service Central de la Statistique et des Études Economiques
(STATEC)
6 Boulevard Royal
2013 Luxembourg

 ${\bf TABLE~1}\\ {\bf BELGIUM:~PRODUCTION~OF~MINERAL~COMMODITIES~1/~2/}$

(Metric tons unless otherwise specified)

Commodity 3/	1996	1997	1998	1999	2000 e/
METALS Aluminum, secondary including unspecified metals e/	3,000	2,000	1,000	1,000	1,000
Arsenic, white e/	2,000	2,000	1,500	1,500	1,500
Bismuth metal e/	800	800	700	700	700
Cadmium, primary	1,580 e/	1,420	1,318	1,400 e/	1,400
Cobalt, primary e/	1,000	1,200	1,200	950	1,110 3/
Copper:	,	,	,		,
Blister: e/					
Primary	3,500	2,000			
Secondary	153,800	141,000 r/	138,000 r/	143,300 r/	164,700 3/
Total	157,300	143,000 r/	138,000 r/	139,000 r/	164,700 3/
Unwrought, total primary and secondary including alloys	425,703	467,494	482,992	485,000 e/	485,000
Refined, primary and secondary, including alloys	386,000	373,000	368,000	388,000 e/	423,100 3/
Iron and steel:					
Pig iron thousand tons	8,628	8,077	8,619 r/	8,431 r/	8,472 3/
Ferroalloys, electric furnace, ferromanganese e/	25,000	25,000	20,000	20,000	20,000
Steel:	10.772	10.720	11.615	10.021	11 (25 2)
Crude thousand tons Hot-rolled products do.	10,773	10,738	11,617	10,931 r/	11,635 3/ 13,689 3/
Hot-rolled products do. Lead, refined:	10,963	12,047	12,195 r/	12,780 r/	13,689 3/
Primary e/ 5/	89,800	94 400	74 200	82,900	08 000
Secondary 6/	31,000 e/	84,400 26,400	74,300 17,200	20,300	98,000 20,000
Total e/	121,000	111,000	91,500	103,000 r/	118,000
Selenium e/ thousand tons	250	250	200	200	200
Tin metal, secondary including alloys e/	3,000	3,000	2,500	8,100 r/	8,500
Zinc:	3,000	3,000	2,300	0,100 1/	0,500
Slab:					
Primary	207,000 r/e/	213,600	205,000	230,500	224,000
Secondary (possibly remelted zinc) e/	27,000	30,000	30,000	28,000	28,000
Total e/	234,000	243,600 r/	235,000	259,000	252,000
Powder	36,000	36,000	30,000	30,000 e/	30,000
INDUSTRIAL MINERALS					
Barite e/	30,000	30,000	40,000	30,000	30,000
Cement, hydraulic thousand tons	7,857	8,052	8,000 e/	8,000 e/	8,000
Clays, kaolin e/ do.	300	300	300	300	300
Lime and dead-burned dolomite, quicklime e/ do.	1,800	1,750	1,750	1,750	1,750
Nitrogen, N content of ammonia e/ do.	750	750	756 4/	850	863 4/
Sodium sulfate e/ do.	250	250	250	250	250
Stone, sand, and gravel: e/					
Calcareous:					
Alabaster	1,144 4/	1,151 4/	1,200	1,200	1,200
Dolomite thousand tons	3,379 4/	3,466 4/	3,500	3,500	3,500
Limestone do.	33,000	30,000	30,000	30,000	30,000
Marble:	275	200	200	200	200
In blocks cubic meters Crushed and other	275 100	300 100	300 100	300 100	300 100
Petit granite (Belgian bluestone):	100	100	100	100	100
Quarried thousand cubic meters	1,200	1,200	1,000	1,000	1,000
Sawed do.	100,000	100.000	100,000	100,000	100.000
Worked do.	15,000	15,000	15,000	15,000	15,000
Crushed and other do.	800,000	800,000	800,000	800,000	800,000
Porphyry, all types thousand tons	4,000	4,000	4,000	4,000	4,000
Quartz and quartzite	500,000	500,000	500,000	500,000	500,000
Sandstone:	,		,	,	,
Rough stone including crushed thousand tons	2,400	2,400	2,400	2,400	2,400
Paving	15,000	14,000	14,000	14,000	14,000
Sand and gravel:	,	,	,	,	,
Construction sand thousand tons	9,000	9,000	8,500	8,500	8,500
Foundry sand	500,000	500,000	500,000	500,000	500,000
Dredged sand thousand tons	2,300	2,300	2,000	2,000	2,000
Glass sand do.	1,900	1,900	1,800	1,800	1,800
	1,,,00	1,,,00	-,	1,000	,
Other sand do.	2,800	2,800	2,800	2,800 5,000	2,800

See footnotes at end of table.

TABLE 1--Continued BELGIUM: PRODUCTION OF MINERAL COMMODITIES 1/2/

(Metric tons unless otherwise specified)

Commo	1996	1997	1998	1999	2000 e/	
INDUSTRIAL MINERALSContinued						
Sulfur, byproduct: e/						
Byproduct:						
Elemental		243,000	250,000	248,000	228,000	230,000 4/
Other forms		163,000	180,000	180,000	180,000	180,000 4/
Total		406,000	430,000	428,000	408,000	410,000 4/
Sulfuric acid, oleum	thousand tons	2,000	2,000	2,000	2,000	2,000
MINERAL FUELS AND	RELATED MATERIALS					
Carbon black e/		1,500	1,500	1,000	1,000	1,000
Coke, all types	thousand tons	3,550	3,401	3,400 e/	3,400 e/	3,400
Gas, manufactured	thousand cubic meters	422,412	372,095	375,000 e/	375,000 e/	375,000
Petroleum refinery products: e/						
Liquefied petroleum gas	thousand 42-gallon barrels	13,321 4/	13,607 4/	14,000	14,000	14,000
Naphtha and white spirit	do.	10,710 4/	13,354 4/	13,000	13,000	13,000
Gasoline	do.	50,549 4/	57,979 4/	60,000	60,000	60,000
Jet fuel	do.	13,000	13,000	13,000	13,000	13,000
Kerosene	do.	600	600	600	600	600
Distillate fuel oil	do.	85,000	85,000	85,000	85,000	85,000
Refinery gas	do.	3,500	3,500	3,500	3,500	3,500
Residual fuel oil	do.	46,286 4/	51,244 4/	50,000	50,000	50,000
Bitumen	do.	4,677 4/	5,766 4/	5,000	5,000	5,000
Other	do.	8,500	8,500	8,500	8,500	8,500
Refinery fuel and losses	do.	12,000	12,000	12,000	12,000	12,000
Total	do.	248,000 r/	264,000 r/	265,000	265,000	265,000

e/ Estimated. r/ Revised. -- Zero.

 ${\it TABLE~2} \\ {\it BELGIUM:~STRUCTURE~OF~THE~MINERAL~INDUSTRY~IN~2000}$

(Thousand metric tons unless otherwise specified)

		Major operating companies		Annual
Commodity		and major equity owners	Location of main facilities	capacity
Cadmium, metal	tons	Union Minière (Sté. Générale de Belgique, 50.2%)	Balen	1,800
Cement		Major companies:		8,400
				Of which:
		Cimenteries CBR SA (Sté. Générale de Belgique)	Plants at Lixhe, Mons/Obourg,	(3,200)
			Harmignies, Marchienne, Ghent, and others	
		Ciments d'Obourg SA	Plants at Obourg and Thieu	(2,800) 1/
		Compagnie des Ciment Belge (Ciments Français)	Plant at Gaurain-Ramecroix	(2,400)
Cobalt		Union Minière (Sté. Générale de Belgique, 50.2%)	Refinery at Olen	500
Copper		do.	Smelter at Antwerp-Hoboken	50
Do.		do.	Refinery at Olen	330
Do.		Metallo-Chimique NV	Smelter at Beerse	80
Dolomite		SA Dolomeuse (Group Lhoist)	Quarry at Marche les Dames	500
Do.		do.	Plant at Marche les Dames	750
Do.		SA de Marche-les-Dames (Group Lhoist)	Quarries at Namèche	3,000
Do.		do.	Plant at Namèche	3,000
Do.		SA Dolomies de Merlemont (Group Lhoist)	Quarry at Philippeville	100
Lead, metal		Union Minière (Sté. Générale de Belgique, 50.2%)	Smelter at Antwerp-Hoboken	90
Do.		do.	Refinery at Antwerp-Hoboken	125

See footnotes at end of table.

^{1/} Estimated data are rounded to no more than three significant digits; may not add to totals shown.

^{2/} Table includes data available through March 2001.

^{3/} In addition to the commodities listed, Belgium produced a number of other metals and alloys for which only aggregate output figures were available.

^{4/} Reported figure.

^{5/} Data not reported; derived by calculating reported total lead output plus exports of lead bullion minus imports of lead bullion.

^{6/} Data represent secondary refined lead output minus remelted lead. As such, the figures are probably high because they include some lead that was sufficiently pure as scrap that did not require remelting, but data are not adequate to permit differentiation.

TABLE 2--Continued BELGIUM: STRUCTURE OF THE MINERAL INDUSTRY IN 2000

(Thousand metric tons unless otherwise specified)

		Major operating companies		Annual
Commodity		and major equity owners	Location of main facilities	capacity
Limestone		Carmeuse S.A. (Long View Investment NV)	Mines and plant at Engis	1,850
Do.		do.	Mines and plant at Frasnes	450
Do.		do.	Mines and plant at Maizeret	850
Do.		do.	Mines and plant at Moha	800
Do.		SA Transcar (Royal Volker Stevin)	Mines and plant at Maizeret	850
Petroleum, refined	42-gallon barrels per day	Refineries:		712,000
				Of which:
		Fina Raffinaderji Antwerp	Refinery at Antwerp	(268,000)
		SA Esso NV	do.	(239,000)
		Belgian Refining Corp.	do.	(80,000)
		Nynas Petroleum NV	do.	(125,000)
Salt		Zoutman NV	Plant at Roeselare	200
Steel:		Companies:		14,000
				Of which:
		Cockerill Sambre SA (Government of Wallonia, 80%)	Plant at Liège and Charleroi	(5,000)
		Sidmar NV (Government of Belgium, 28.24%; ARBED in Luxemburg, 71.76%)	Plant at Ghent	(3,960)
		Usines Gustave Boël NV	Plant at La Louviere	(2,020)
		Forges de Clabecq SA	Plant at Clabecq	(1,500)
		SA Fabrique de Fer de Charleroi	Plant at Charleroi	(600)
		ALZ NV	Plant at Genk-Zuid	(360)
		New Tubemeuse (NTW) SA	Plant at Flemalle	(300)
Zinc, metal		Union Minière (Sté. Générale de Belgique, 50.2%)	Smelter and refinery at Auby and	450
			Balen	

^{1/} Includes the capacity of the company SA Ciments de Haccourt.

TABLE 3
BELGIUM: EXPORTS AND REEXPORTS OF DIAMONDS 1/

	1999		20	00
	Quantity		Quantity	
	(thousand	Value	(thousand	Value
Grade	carats)	(millions)	carats)	(millions)
Worked, but not mounted or set	7,533	\$4,283	8,590	\$5,801
Natural rough, unsorted, and unworked or bruted	173,262	5,638	136,498	6,603
Industrial	8,292	35	12,990	43
Dust	4,426	2	5,877	3
Synthetic	51,174	30	58,661	37
Total	244,687	9,988	222,616	12,487

¹/ Where necessary, values have been converted from Belgian francs (BF) to U.S. dollars (US\$) at the rate of BF46.01=US\$1.00.

Source: Ministére des Affaires Economiques, Carreffour de l'Economie, Brussels, Belgium, June 2001, v. 2001/6A, p. 11.

TABLE 4
BELGIUM: IMPORTS OF DIAMONDS 1/

	1999		20	00
	Quantity		Quantity	
	(thousand	Value	(thousand	Value
Grade	carats)	(millions)	carats)	(millions)
Worked, but not mounted or set	7,344	\$3,484	8,262	\$4,861
Natural rough, unsorted, and unworked or bruted	149,687	5,789	125,010	7,025
Industrial	34,019	55	27,221	41
Dust	3,485	11	5,476	1
Synthetic	71,434	40	74,827	48
Total	265,969	9,379	240,796	11,976

^{1/} Where necessary, values have been converted from Belgian francs (BF) to U.S. dollars (US\$) at the rate of BF46.01=US\$1.00.

Source: Ministére des Affaires Economiques, Carreffour de l'Economie, Brussels, Belgium, June 2001, v. 2001/6A, p. 11.

 ${\bf TABLE~5} \\ {\bf LUXEMBOURG:~PRODUCTION~OF~MINERAL~COMMODITIES~1/~2/}$

(Metric tons)

Commodity 3/	1996	1997	1998	1999	2000 e/
Cement, hydraulic	666,771 r/	650,000 r/e/	650,000 r/e/	600,000	600,000
Gypsum and anhydrite, crude e/	400	400	400	400	400
Iron and steel, metal:					
Pig iron	829,000	437,000			
Steel:					
Crude	2,501,000	2,580,000	2,478,000	2,427,000 r/	2,571,000 4/
Semimanufactures	2,313,000	2,466,000	2,517,000	2,775,000 r/	3,019,000 4/
Phosphates, Thomas slag: e/					
Gross weight	500,000	500,000	475,000	475,000	475,000
P2O5 content	75,000	75,000	70,000	70,000	70,000
	•				•

e/ Estimated. r/ Revised. -- Zero.

 ${\it TABLE~6} \\ {\it LUXEMBOURG:}~ {\it STRUCTURE~OF~THE~MINERAL~INDUSTRY~IN~2000}$

(Thousand metric tons)

-	Major operating companies		Annual
Commodity	and major equity owners	Location of main facilities	capacity
Cement	SA des Ciments Luxembourgeois (ARBED, 50%; SGB, 25%)	Plant at Esch-sur-Alzette	450
Do.	Intermoselle SARL (ARBED, 33%)	Plant at Rumelange	1,000
Steel	Acieries Reunies de Burbach-Eich-Dudelang (ARBED)	Plants at Differdange, Dudelange, Esch-Belval,	5,320
	[Belgian Government (31%) and others]	and Esch-Schifflange	

^{1/} Table includes data available through March 2001.

^{2/} Estimated data are rounded to no more than three significantly digits.

^{3/} Construction materials, such as dimension stone and sand and gravel, are also produced, but the amounts are no longer reported, and no basis exists for the formulation of reliable estimates of output levels.

^{4/} Reported number.